

# ACL Reconstruction and Extra-Articular Tenodesis in a Contralateral Above-Knee Amputee

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## INTRODUCTION:

Anterior cruciate ligament (ACL) injury in the contralateral knee following below- or above-knee amputation significantly complicates a patient's rehabilitation. A stable contralateral knee is required during prosthetic fitting following amputation. An extra-articular tenodesis procedure during ACL reconstruction may improve rotatory instability and overall outcomes compared to ACL reconstruction alone.

## REPORT:

A 27-year-old male following a severe motor vehicle accident sustained bilateral open femur fractures with the left femur associated with vascular compromise. He underwent an above-knee amputation of the left femur while the right femur was treated with an external fixator then fixed with a retrograde femoral nail which subsequently united. Despite rehabilitation, the patient was unable to weight bear on his right lower limb due to knee pain and instability. Clinically, the patient exhibited a high-grade pivot shift on examination. The femoral nail was removed and an MRI done confirmed a complete ACL tear. He then underwent an arthroscopic right ACL reconstruction with tenodesis screw fixation (modified LeMaire procedure) on both femur and tibia. Post-operatively, rehabilitation was given to establish confidence in single-leg stance and gait training using the contra-lateral prosthesis. At 3 months postoperatively, the patient regained knee range of motion and was able to perform single-leg half-squats. At 18 months post-surgery, the patient was mobilizing with crutches and performing his daily living activities independently (Figure 1c).

**Figure 1:** (a) Pre-operative x-ray with retrograde femoral nail. (b) Post-operative following ACL reconstruction and Modified

**LeMaire. (c) Patient on 18-month follow-up in the clinic.**



## CONCLUSION:

A successful outcome is possible following combined ACL reconstruction and a Modified LeMaire extra-articular tenodesis in a patient with ipsilateral femoral trauma and a contralateral above-knee amputation. This is the first described case of utilizing these methods in a complex case requiring above-knee amputation.

## REFERENCES:

1. Jesani S et al. Modified LeMaire lateral extra-articular tenodesis augmentation of anterior cruciate ligament reconstruction. *JBJS Essent Surg Tech.* 2019; 9(4). DOI: 10.2106/JBJS.ST.19.00017